

AMENDMENTS TO THE SPECIFICATION:

Please amend the title of this application as follows:

SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE
SAME USING IMPLANTED ELECTRICALLY INACTIVE IMPURITIES

Please amend the specification as follows:

Please amend the paragraph beginning at page 5, line 21, as follows:

According to an another aspect of the invention, there is provided a method of manufacturing a semiconductor device, comprising: providing a gate electrode having a gate insulating film on one main surface of a semiconductor substrate; entirely implanting electrically inactive first impurity to the one main surface of the semiconductor substrate provided with the gate electrode, excluding a region below the gate electrode, [[while]] and implanting electrically active second impurity having predetermined conduction type to the semiconductor substrate to a region adjacent to the gate electrode of the semiconductor substrate using the gate electrode as a mask; forming shallow source/drain diffusion regions having the predetermined conduction type, the shallow source/drain diffusion regions being formed in a manner that heating treatment using light is carried out with respect to the semiconductor substrate to which the first and second impurities are implanted, and thereby, the second impurity is activated; providing a gate sidewall film around the gate electrode; entirely implanting the first impurity to the one main surface of the semiconductor substrate provided with the gate sidewall film, excluding a region below the gate electrode, [[while]] and

implanting the second impurity to the semiconductor substrate to a region adjacent to the gate sidewall film of the semiconductor substrate using the gate electrode and the gate sidewall film as a mask; and forming deep source/drain diffusion regions having the predetermined conduction type, and continuing with the shallow source/drain diffusion regions, the deep source/drain diffusion regions being formed in a manner that the heating treatment is carried out with respect to the semiconductor substrate to which the first and second impurities are implanted, and thereby, the second impurity is activated.

Please amend the paragraph beginning at page 7, line 5, as follows:

According to yet another aspect of the invention, there is provided a semiconductor device comprising: a semiconductor substrate formed with source/drain diffusion regions having predetermined conduction type, and the semiconductor substrate being subjected to the following treatment such that electrically inactive first impurity is entirely implanted to the semiconductor substrate while electrically active second impurity having predetermined conduction type being implanted thereto, and the source/drain diffusion regions being formed in a manner that heating treatment using light is carried out with respect to the semiconductor substrate to which the first and second impurities are implanted, and thereby, the second impurity is activated; and a gate electrode provided on the source/drain diffusion regions, and having a gate insulating film and a gate sidewall film.

Please add the following new paragraphs beginning at page 7, line 22.

According to an another aspect of the invention, there is provided a method of manufacturing a semiconductor device, comprising entirely implanting at least one of group IV–A elements as electrically inactive first impurity to one main surface of a semiconductor substrate; and carrying out heat treatment by light with respect to the semiconductor substrate to which the first impurity is implanted, the light having a main spectrum in range of wavelength shorter than silicon (Si) absorption end, and emitting time of the light being 100 msec or less.

According to an another aspect of the invention, there is provided a method of manufacturing a semiconductor device, comprising providing a gate electrode having a gate insulating film on one main surface of a semiconductor substrate; entirely implanting at least one of group IV–A elements as electrically inactive first impurity to the one main surface of the semiconductor substrate provided with the gate electrode, excluding a region below the gate electrode, and implanting electrically active second impurity having predetermined conduction type to the semiconductor substrate to a region adjacent to the gate electrode of the semiconductor substrate using the gate electrode as a mask; forming shallow source/drain diffusion regions having the predetermined conduction type, the shallow source/drain diffusion regions being formed in a manner that heating treatment using light is carried out the semiconductor substrate to which the first and second impurities are implanted, and thereby, the second impurity is activated, the light having a main spectrum in range of wavelength shorter than silicon (Si) absorption end, and emitting time of the light being 100 msec or less; providing a gate sidewall film around the gate electrode; entirely implanting the first impurity to the one main surface of the semiconductor substrate provided with the gate sidewall film,

excluding a region below the gate electrode and the gate sidewall film, and implanting the second impurity to the semiconductor substrate to a region adjacent to the gate sidewall film of the semiconductor substrate using the gate electrode and the gate sidewall film as a mask; and forming deep source/drain diffusion regions having the predetermined conduction type, and continuing with the shallow source/drain diffusion regions, the deep source/drain diffusion regions being formed in a manner that the heating treatment using the light is carried out with respect to the semiconductor substrate to which the first and second impurities are implanted, and thereby, the second impurity is activated.

Please amend the paragraph beginning at page 9, line 9, as follows:

In the embodiment, electrically inactive impurities are ion-implanted into the entire surface of a semiconductor substrate at least one time before heat treatment by radiant energy is carried out with respect to the semiconductor substrate. In this case, at least one of group ~~[[IV-B]]~~ IV-A elements such as C, Si, Ge, Sn and Pb is used as the electrically inactive impurity. By doing so, it is possible to prevent damages such as dislocation, defect and morphological degradation in the semiconductor substrate. The following is a detailed description on the case of manufacturing a CMOS transistor on the semiconductor substrate.

Please amend the paragraph beginning at page 16, line 16, as follows:

The following is a description on the comparison between semiconductor substrates subjected to heat treatment according to the embodiment and the

conventional technique. The semiconductor substrate (silicon substrate) given as the comparative example differs from the above-mentioned embodiment in the following points. The ion implantation process of group [[IV-B]] IV-A elements such as Ge shown in FIG. 1C and FIG. 3B is not carried out. Impurities As, B and P are ion-implanted, and thereafter, light beam from the Xe flash lamp is immediately irradiated under the same conditions as the embodiment.